UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,576	12/05/2003	Praveen Sharma	Q-65721	8084

23373 7590 09/08/2006

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
SWITZER, JULIET CAROLINE	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,576	SHARMA ET AL.	
	Examiner	Art Unit	
	Juliet C. Switzer	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6/05; 12/03
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The preliminary amendments filed 12/5/03, 1/6/04, 6/7/05, and 6/9/05 have been entered. Claims 18-38 are pending and examined herein.

Information Disclosure Statement

2. The IDS filed 12/5/03 and 6/7/05 have been considered. A signed copy of the 1449 are included with this office action.

Priority

3. Applicant's claim to priority is acknowledged. Applicant is requested to update the first paragraph of the specification to include the issued patent number of the parent application.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 28, 30, 31, 32, 33, 34, 35, 36, 37, and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 28, the recitation "said cancer" in step (a) of the claim is indefinite because the claim does not previously recite an organism that has any cancer, and so this phrase lacks proper antecedent basis in the claim. The other rejected claims depend from claim 28 and are thus indefinite over the same language that is present in claim 28.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 18-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a rejection for new matter. The pending claims were filed in a preliminary amendment on 1/6/04.

The newly filed claims add the limitation that mRNA is isolated from blood cells from a patient having cancer wherein said cells (which are from blood) "have not contacted the area of said cancer." All of the independent claims contain similar limitations, reciting the mRNA isolated from blood cells from a patient with cancer wherein the blood has not contacted the area of the cancer. This particular combination of limitations does not appear to have basis in the parent specification. Namely, the specification does not provide basis for blood cells in a patient with cancer wherein the blood cells have not contacted the area of disease (that is the cancer tumor), and in particular where the cancer is cancer of the stomach, lung, breast, prostate gland, bowel, and skin cancer. The remarks filed with the amendment do not point to basis for the amendments.

Therefore, the claims are rejected as containing new matter.

8. Claims 18-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Nature of the Invention

The invention concerns identifying and using isolated selected mRNA species or cDNA species that are "useful for diagnosing or identifying cancer or a stage thereof."

The claims include claims directed to methods of obtaining isolated selected mRNA species "useful for diagnosing or identifying cancer or a stage thereof," and methods for preparing a gene transcript pattern probe kit which comprise steps of isolating mRNA from cells from blood of one or more eukaryotic organisms which are known to have cancer or a stage thereof (for example, independent claims 18 and 19). The claims require that the cells "have not contacted the area of said cancer." The further method steps of these claims set forth isolating mRNA from cells from a normal sample, and separating the mRNA species and selecting 10 or more mRNA he claims are also drawn to methods for diagnosing patients using said the products identified by the methods for obtaining isolated selected mRNA species.

Additional claims are drawn to methods for preparing a standard gene transcript pattern characteristic of cancer and include steps where blood cells from an organism known to have cancer is obtained and mRNA is isolated, and the mRNA is hybridized to mRNAs which are present "at a different level" in a blood sample from one or more normal patients versus patients with cancer, wherein the mRNA are "specific for said cancer or stage thereof" and wherein said cells have not contacted the area of said cancer (for example, independent claims 27 and 28).

Thus, in this case the nature of the invention requires the knowledge of which particular transcripts meet the characteristics that they are expressed at different levels in blood that has not contacted the area of said cancer. The claims set forth that the methods will isolate nucleic acids that are "useful for diagnosing or identifying cancer or a stage thereof" and thus the nature of the invention also requires that the disclosed methods identify such molecules reliably such that they can be used in diagnosing, identifying or staging cancer. The claims are all related to the identification and use of mRNA species that are present at different levels in cancer versus non-cancer samples. Dependent claims 37 and 38 recite different possible types of cancers (stomach, lung, breast, prostate, bowel, and skin), but the remaining claims are generic reciting "cancer or a stage thereof."

Independent claim 29 is drawn to a method "of diagnosing or identifying cancer or a stage thereof" and has steps where a standard gene transcript pattern is produced for a test sample (steps (a) to (c) which are similar to steps (a) to (c) of claims 27 and 28) and then this pattern is compared to a pattern which is produced from an individual who is known to have said cancer or a stage thereof. The claim recites that the comparison is carried out "so as to determine the degree of correlation indicative of the presence of said cancer or stage thereof, and so as to diagnose or identify said cancer or stage thereof. Thus, in this case the nature of the invention requires the knowledge of which particular transcripts meet the characteristics that they are expressed at different levels in blood that has not contacted the area of said cancer.

In summary, independent claims 18 and 19 are methods for identifying differentially expressed transcripts which are useful for diagnosing, identifying or staging cancer, while claims 27, 28, and 29 make use of these transcripts for preparing transcript patterns and for diagnosing,

identifying or staging cancer. In all cases the claims recite analysis of mRNA from blood cells that have not come in contact with the cancer. Furthermore, in all cases, the claims rely upon the ability to associate the presence of mRNA at "different levels" in control and cancer patients with the diagnosis or stage of cancer.

Scope of the claims

The independent claims are all sufficiently broad so as to encompass the obtaining or use of any possible 10 or more molecules for the "diagnosing or identifying cancer or a stage thereof." The claims are broad in scope with regard to the fact that in all of the claims the critical molecules are entirely unidentified. The claims are very broad in scope because they encompass finding or using molecules related to any type of cancer, with some dependent claims which limit the types of cancer. The claims are also extremely broad because they require only the comparison of a mRNA levels in a single individual's blood to that of another single individual, and the claims thus imply that the difference in two peoples levels of mRNA expression is sufficient to identify a molecule as a marker and use that molecule in diagnostic procedures.

The requirement in the claims that the test blood cells "have not contacted the area of said cancer" significantly narrows the scope of the claims with regard to this aspect, since blood flow is generally known to carry blood throughout organisms, and this limitation requires examining blood cells that have not contacted certain portions of the body.

Teachings in the Specification/Examples

The specification does not provide a single working example of methods which are applied to cancer in humans or in any other species of eukaryotic organism. The specification

generally discusses that the disclosed methods can be applied to cancer (p. 6, 2nd ¶), but not a single working example is provided where nucleic acids which would be useful for diagnosing or identifying cancer or a stage thereof are actually obtained, nor does the specification provide an example of where such molecules are used to diagnose or identify cancer or a stage therof.

The specification does not provide any guidance as to how to identify blood cells within a blood sample that have or have not come in contact with a particular part of the body. For example, claim 38 limits the type of cancer to breast cancer, so presumably in this case the cancer would be at least in the breast (but obviously could be other places throughout the body if there had been metastases). The specification does not provide any guidance as to how to identify blood cells which "have not contacted the area of disease."

The specification provides a single working example wherein mRNA is isolated from cells that did not come in contact with an area of disease and were obtained from an area distant from the area of disease is isolated and used to create diagnostic gene transcript patterns. Particularly, in example 6, a differential expression type methodology is used to analyze infection for a fungal pathogen in Norway spruce. A root fungus, Pythium dimorphum, is introduced to Norwegian spruce. Samples mRNA is collected from samples of the needles of the infected plants and control plants, reverse transcribed and amplified using primers specific to transcripts that were differentially expressed in plants that were infected with the fungus or spruce that were challenged with "other types of stress (specification page 38)." The amplified cDNA samples were hybridized to probes for the differentially expressed transcripts. Hybridization patterns are shown in figure 2, where there is a clear difference in the pattern from the needles of the tree stressed with the fungus versus the control needles (see second page of

Figure 2, bottom two graphs). However, this example does not sufficiently demonstrate that this method is diagnostic of the particular condition of the fungal pathogen, because it does not differentiate between the determination that one can determine that the spruce was STRESSED versus having a particular disease. The example states that some of the probes used are not specific to the disease but of are particular to stressed plants.

The remaining examples provided in the specification are largely prophetic, and do not provide clear data which indicates the functionality of this invention for cancer or any other disease. Examples 1 and 2 provide direction as to the use of this invention for the diagnosis of Alzheimer's disease and senile dementia, however, they do not provide the transcript patterns necessary or any specific probes useful for the diagnosis. Example 4 appears to provide the use of a differential expression methodology for the production of a diagnostic transcript pattern for Arabidopsis, however, the specification does not provide any data as to the disease being studied. Thus, it is unclear if the disease is systemic or localized. It is not clear if the tissue samples taken were from the location of the disease or from some other disease. The example states that it is leaves that are sampled, but it gives no indication if it was healthy leaves or diseased leaves. Example 5 provides a prophetic example of humans, merely stating that results would be expected to be "similar to those in figure 1." The result in figure 1 appear to be hypothetical results.

State of the Prior Art and Level of Unpredictablity

The prior art provides extensive guidance as to the use of differential expression methodology for the identification of probes useful for the detection of disease (see, for example, Graber *et al.* or Ditkoff *et al.*, as cited in the IDS). With regard to the identification of nucleic

acid probes which are isolated from cells have not come in contact with the area of the cancer, the prior art is silent. Ralph *et al.* (US 6190857, as cited in IDS) provide probes which identify genes that are expressed in the peripheral blood of individuals with prostate or breast cancer compared to normal individuals. Ralph et al. teach that their invention is directed towards detecting a response of circulating leukocytes to the disease site (Col. 5), thus suggesting that the basis of their invention is that the cells have in fact come in contact with the disease site. Zhi-Xin *et al.* (as cited in IDS) teach that IL-2R expression in peripheral blood mononuclear cells is closely associated with the presence of tumor metastasis in lung cancer patients. Like Ralph et al., Zhi-Xin et al. teach that the expression they are detecting is a result of the cells coming in contact with the cancer cells (see page 10 of the translation of Zhi-Xin et al).

Neither the specification nor the prior art provide any guidance as to how to identify cells in a blood sample that have "not come in contact with the area of said cancer." For example, the specification does not provide any guidance as to how one would ascertain which blood cells in a sample have come in contact with the possible stomach tumor and which have not. This identification is highly unpredictable since they would ostensibly all cells be in the same blood sample. Liew et al. (J Lab Clin Med 2006; 147:126-132) teach that "Blood is classified as a fluid connective tissue which can be defined as cells suspended in a fluid matrix functioning to connect the entire biological system at the physiological level...Thus, the blood pervades the entire body, is in a constant state of renewal, and provides a protective barrier between the external and internal environments (p. 126)." Simply put, blood travels throughout the entire organism, and it is unknown how one would identify blood cells that have or have not come in contact with "the area of said cancer" if that cancer is a tumor of the stomach, lung,

breast, prostate gland, bowel or skin or any other cancer such as thyroid cancer, or bladder cancer, for example.

While level of skill in the art is quite high, but the unpredictability associated with identifying isolated selected mRNA species which are obtained from cells which have not contacted the point of cancer and are useful for the detection of cancer is higher. The human blood, for example, expresses hundreds of thousands of different transcripts, and which of these particular transcripts would be useful for the detection of any particular disease is highly unpredictable. The determination of such an association requires extensive laboratory work, as is exemplified by the teachings of Ralph *et al.* In order to enable the instant claims to their current breadth, some showing that the method functions for a representative number of types of cancer would be required and stages of cancer. Since the claims embrace diagnostics for any type and stage of cancer in any eukaryote, a representative number would have to include different eukaryotes and a variety of diseases. No such showing is provided in the instant specification.

Further, the claims of the instant application set forth the comparison of the mRNA or cDNA levels in a single individual versus another single indiviual, and they suggest or overtly claim that a difference in gene expression between the two sufficent to identify, diagnose or stage cancer. Neither the specificaiton nor the claims, for any individual gene or for all genes in general, set forth a threshold of difference between two individuals that would be sufficient to conclude that the difference in gene expression between a test individual and any control individual (either with or without cancer) is sufficient to draw this conclusion. Because the claims encompass any level of altered gene expression, it is relevant to point out that the post-

filing art of Cheung et al (2003, Nature Genetics, Vol. 33, 422-425) teaches that there is natural variation in gene expression among different individuals. The reference teaches an assessment of natural variation of gene expression in lymphoblastoid cells in humans, and analyzes the variation of expression data among individuals and within individuals (replicates) (p.422, last paragraph; Fig 1). The data indicates that, for example, expression of ACTG2 in 35 individuals varied by a factor of 17; and that in expression of the 40 genes with the highest variance ratios, the highest and lowest values differed by a factor of 2.4 or greater (Fig 3). It is thus unpredictable as to whether or not any level of altered gene expression is indicative of a disease.

The unpredictability of correlating gene expression level to any phenotypic quality is taught in the post-filing art of Wu (2001, J Pathol 195:53-65). Wu teaches that gene expression data, such as microarray data, must be interpreted in the context of other biological knowledge, involving various types of 'post genomics' informatics, including gene networks, gene pathways, and gene ontologies (p.53, left col.). The reference indicates that many factors may be influential to the outcome of data analysis, and teaches that expression data can be interpreted in many ways. The conclusions that can be drawn from a given set of data depend heavily on the particular choice of data analysis. Much of the data analysis depends on such low-level considerations as normalization and such basic assumptions as normality (p.63 - Discussion). The art of Newton et al (2001, Journal of Computational Biology, Vol. 8, No. 1, pages 37-52) further teaches the difficulty in applying gene expression results. Newton et al teaches that a basic statistical problem is determining when the measured differential expression is likely to reflect a real biological shift in gene expression, and replication of data is critical to validation (p.38, third full paragraph).

Quantity of Experimentation

The instant specification does not provide enabling support for the practice of a single embodiment within the claimed invention. An extensive amount of experimentation would be required to practice the claimed invention. First, one would be required to establish methodology to determine if particular blood cells have come in contact with an area of cancer. This in itself is a highly unpredictible endeavour, if not impossible, given that blood travels throughout the entire body. Further, though, given the broad scope of the claims and the unpredictable nature of the invention, one would have to also undertake extensive experimentation to establish whether ten or more markers can be identified in the blood as differentially expressed in patients having any single type or stage of cancer, and also whether these markers are specific to the type or stage of cancer or if they are common markers for all cancers. One would have to complete this experimentation using case controlled studies for many, many types of cancer, including htose recited in claims 37 and 38, but also for others in order to meet the scope of the instant claims. The markers used in the methods for diagnosis in the instant claims are entirely undefined by the specificaiton by any structural means, and thus, one would have to undertake the discovery of these molecules for each type of cancer one wanted to practice the claimed invention in order to diagnose or stage. The quantity of experimentaiton, especially in view of the unpredictable nature of the invention, is enormous.

Conclusion

Thus, having carefully considered all of these factors, it is concluded that it would require undue experimentaiton to practice the claimed invention.

9. Claims 27-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claims 27, 28, and 29 each include steps wherein isolated mRNA or isolated cDNA from a sample are hybridized to 10 or more mRNA or cDNA species transcribed from mRNA which are present at a different level in cells in a blood sample from one or more normal eukaryotic organisms than in corresponding cells in a blood sample from one or more eukaryotic organisms known to have said cancer or a stage thereof. The claim further requires that the 20 or more mRNA are "specific" for said cancer and that the cells in which they are differentially expressed have not contacted the area of said cancer and that the blood sample is obtained from a part of said organism distant to the area of said cancer. Thus, the practice of the claimed method requires the hybridization to a particular set of probes that are identified only by their function (that they are differentially present in two samples and that they are indicative of cancer) and by the type of cell that they were identified within (blood cells that have not touched the area of the disease and that were isolated distant from the area of disease). The specification and claims suggest that there are hundreds of possible genes that meet these requirements (see claim 34, for example which requires that between 10 and 500 mRNA species are used). The scope of the claim is thus quite broad with regard to the actual sequences used. There are thousands of possible genes within the genome of any given eukaryotic organism.

The application does not provide any descriptive support of even a single example of an appropriate mRNA or cDNA probe for use in the claimed methods. The specification generally suggests that such probes could be identified for cancer, but does not describe a single sequence that falls within the scope of the requirements for sequences in step (b) of the rejected independent claims. Thus, there is no actual reduction to practice. There is no detailed drawing or chemical formula or even gene name to suggest molecules that would be useful in the claimed invention. There is no disclosure of sufficient, relevant, identifying characteristics of the molecules essential to practice the claimed invention, other than a general disclosure of their function. The specifically generally suggests such molecules as are necessary to practice the claimed invention might exist, but the specification does not provide any written description as to what the structure of these molecules is. Thus, the claims are rejected for lack of adequate written description.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting

ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 18-38 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-36 of copending Application No. 11/149370. Although the conflicting claims are not identical, they are not patentably distinct from each other because the independent claims in the copending application require steps that are generic to the instantly claimed invention since the independent claims in the copending application encompass methods relative to any disease. These claims do have very similar steps to those in the instant invention, namely they specifically recite blood cells that are obtained from a part of said human distant to the area of disease and have not contacted said area of said disease. Likewise, each of the limitations of the dependent claims in the instant application are provided in dependent claims in the copending application. Claims 35 and 36 recite embodiments wherein said disease is "cancer" and wherein said disease is "stomach, lung, breast, prostate, and bowel cancer." Thus, given all of these recitations, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have practiced the methods set forth in the copending application and applied those methods to cancer, and more particularly any or all of the cancer types recited in the claims of the copending application. One would have been motivated to practice such an invention by the express presence of these embodiments as claimed embodiments.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

12. No claim is allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliet C Switzer whose telephone number is (571) 272-0753. The examiner can normally be reached on Monday, Tuesday, or Thursday, from 9:00 AM until 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached by calling (571) 272-0735.

The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-0507.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system

provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Juliet C. Switzer
Primary Examiner
Art Unit 1634

August 29, 2006